Service Schematics

NOKIA N72

RM-180

Introduction

IMPORTANT:

This document is intended for use by authorized NOKIA service centers only.

"Service Schematics" was created with focus on customer care.
The purpose of this document is to provide further technical repair information for NOKIA mobile phones on Level 3/4 service activities.
It contains additional information such as e.g. "Component finder".
The "Signal overview" page gives a good and fast overview about the most important signals and voltages on board.
Saving process time and improving the repair quality is the aim of this document.
It is to be used additionally to the service manual and other training or service information such as Service Bulletins.

All measurements were made using following equipment:

Nokia repair SW	: Phoenix version 2006.12.5.136
Oscilloscope	: Fluke PM 3380A/B
Spectrum Analyzer	: Advantest R3162 with an analog probe
RF-Generator / GSM Tester	: Rhode & Schwarz CMU 200
Multimeter	: Fluke 73 Series II

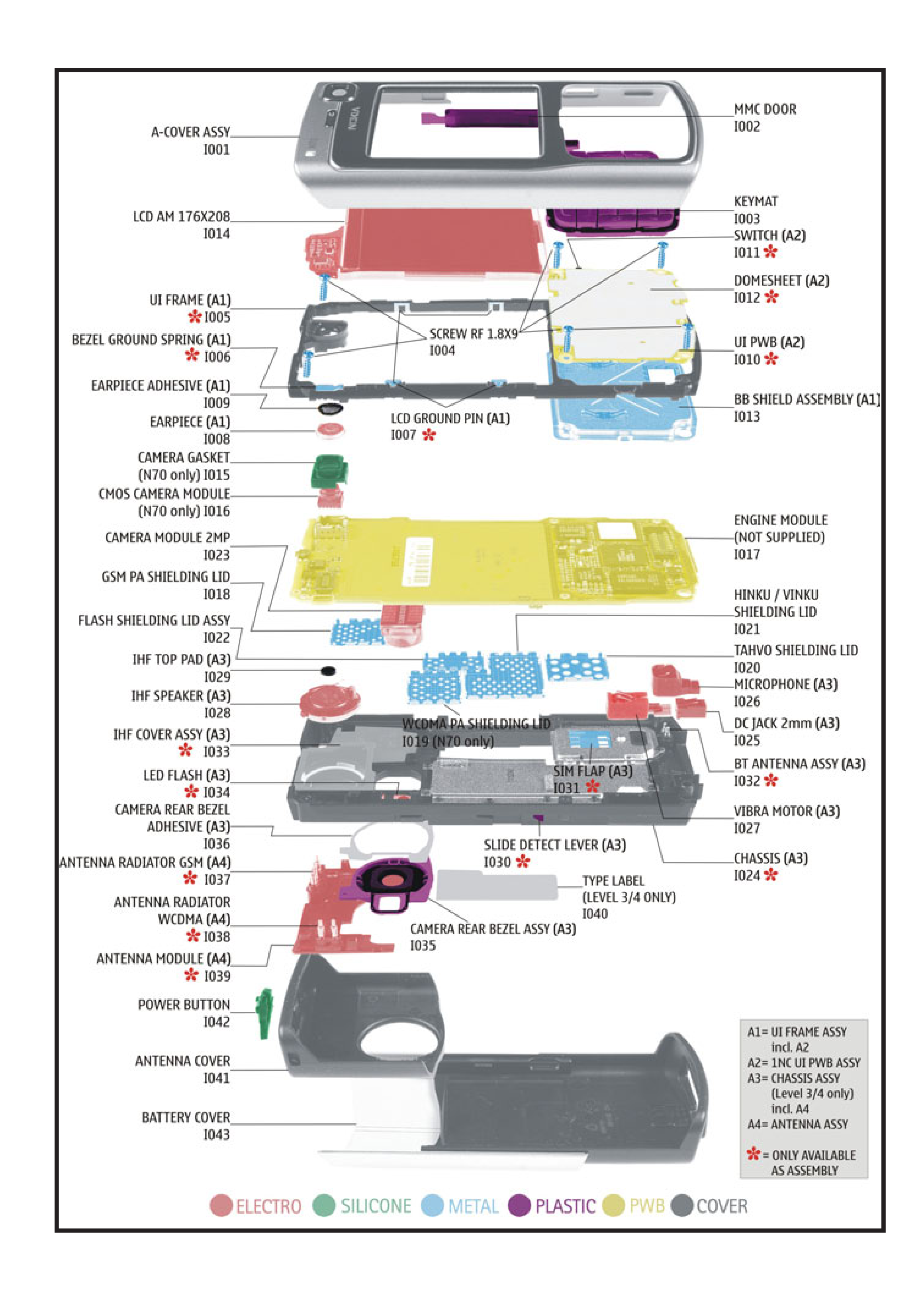
While every endeavour has been made to ensure the accuracy of this document, some errors may exist. If the reader finds any errors, NOKIA shall be notified in writing.

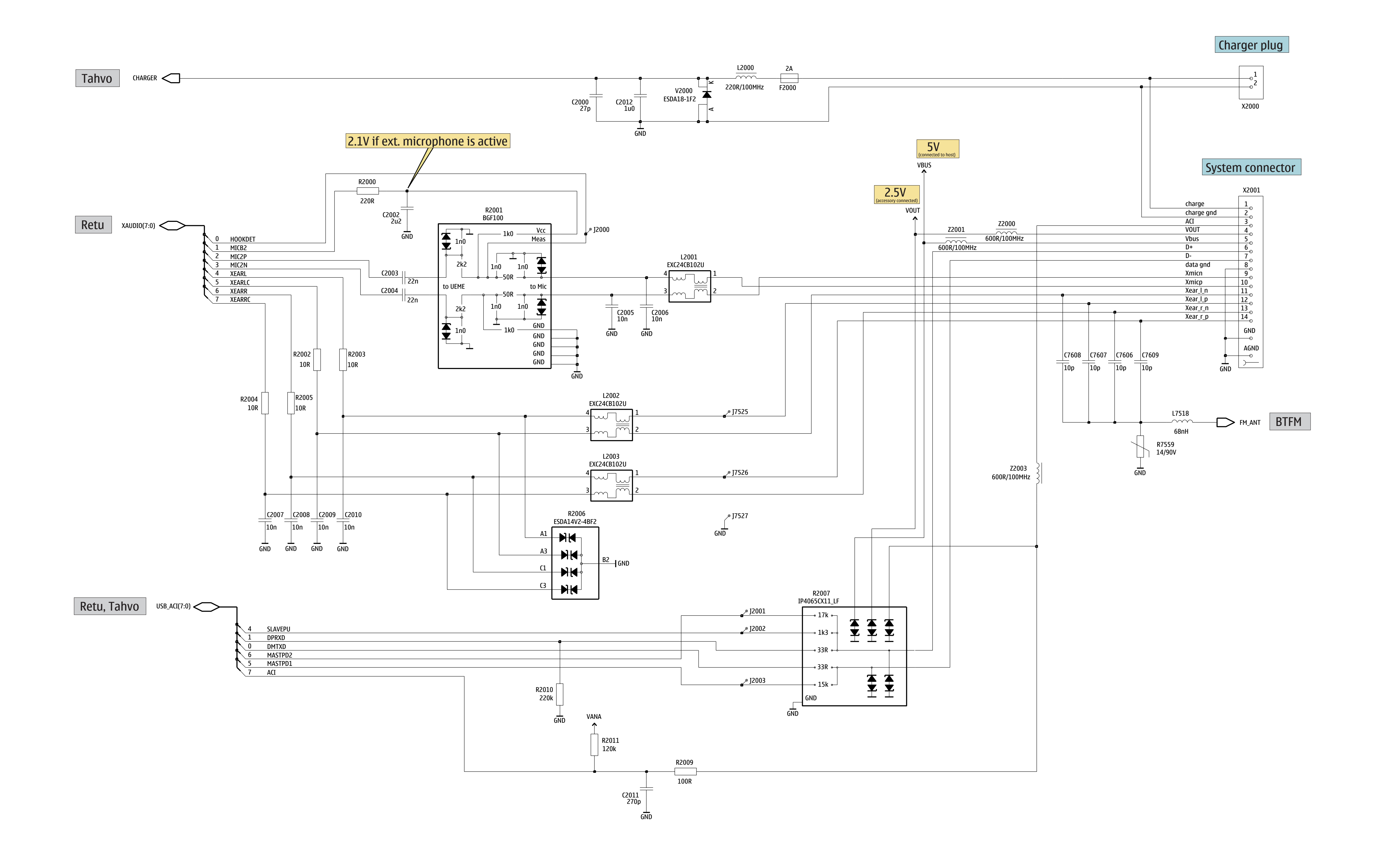
Please send E-Mail to: training.sace@nokia.com



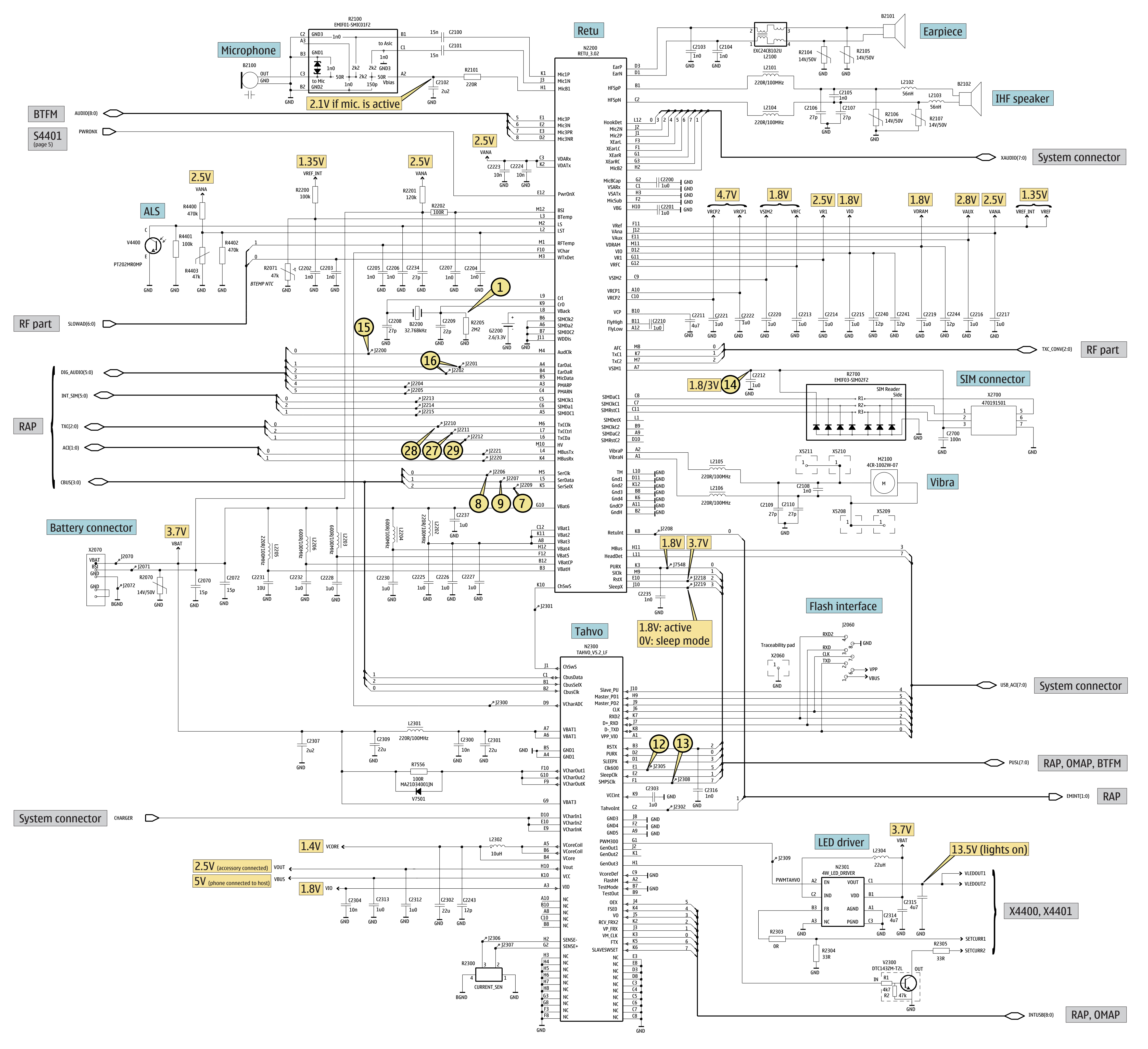
Table of Contents	Page

Exploded view and component disposal

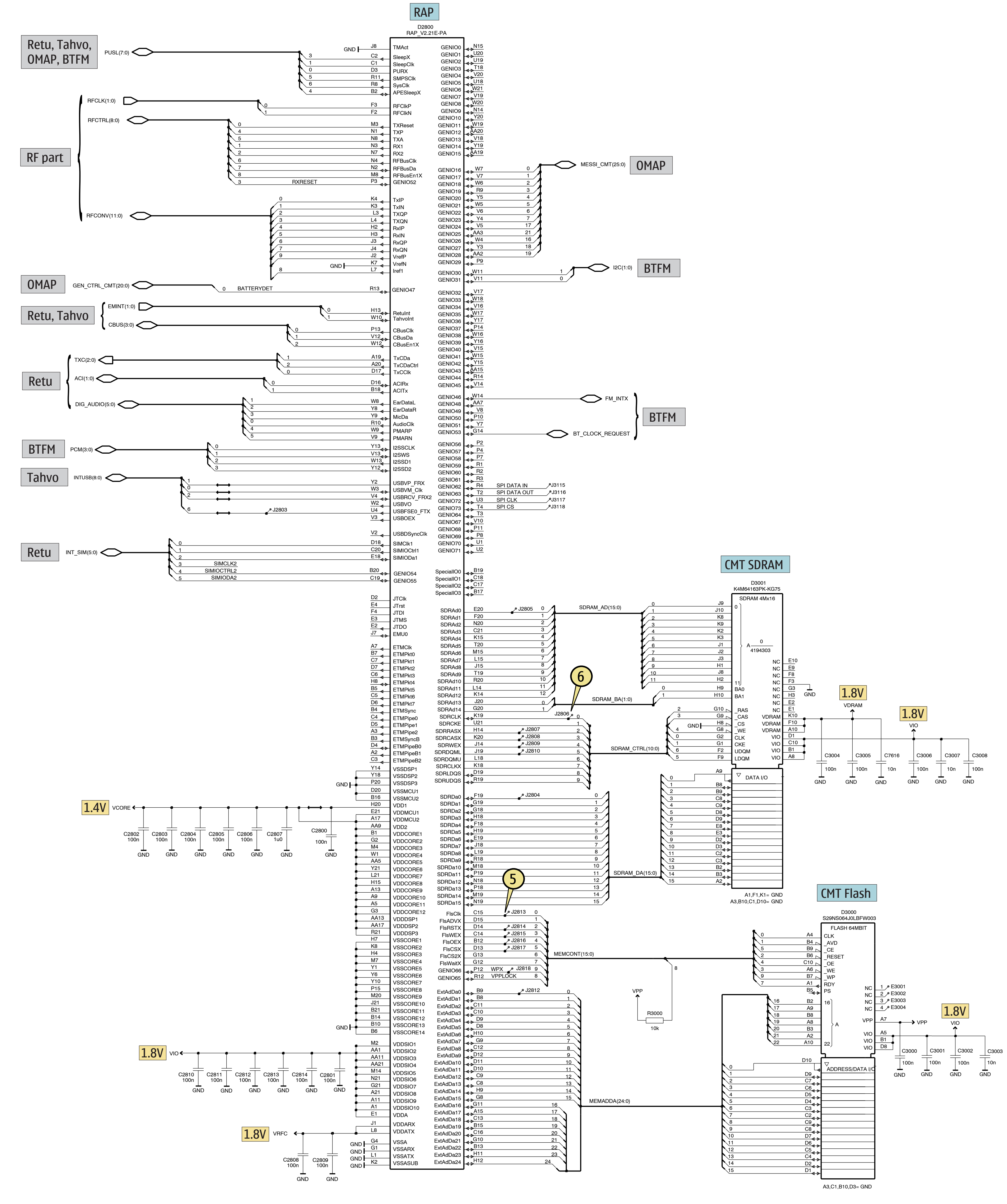


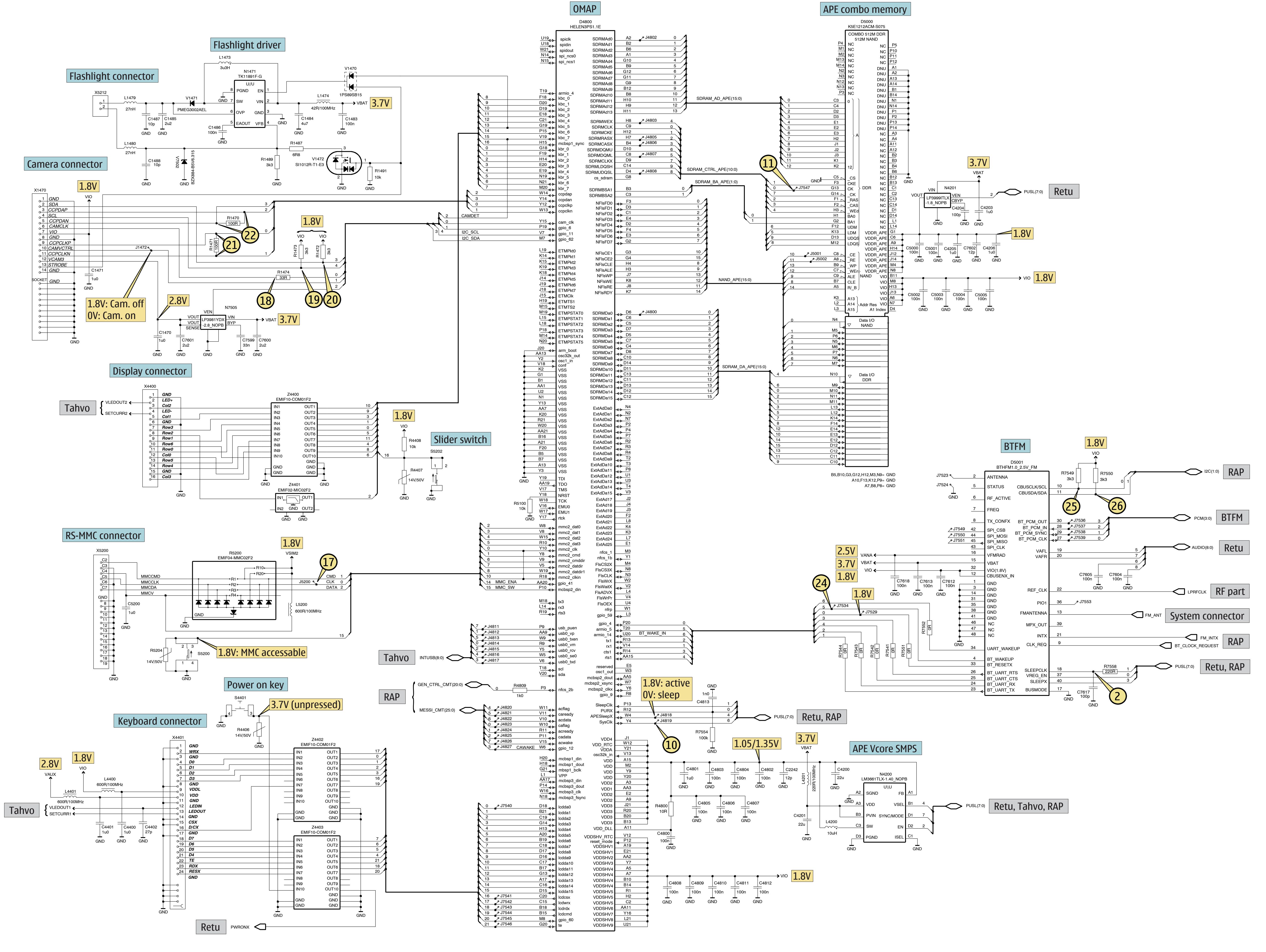


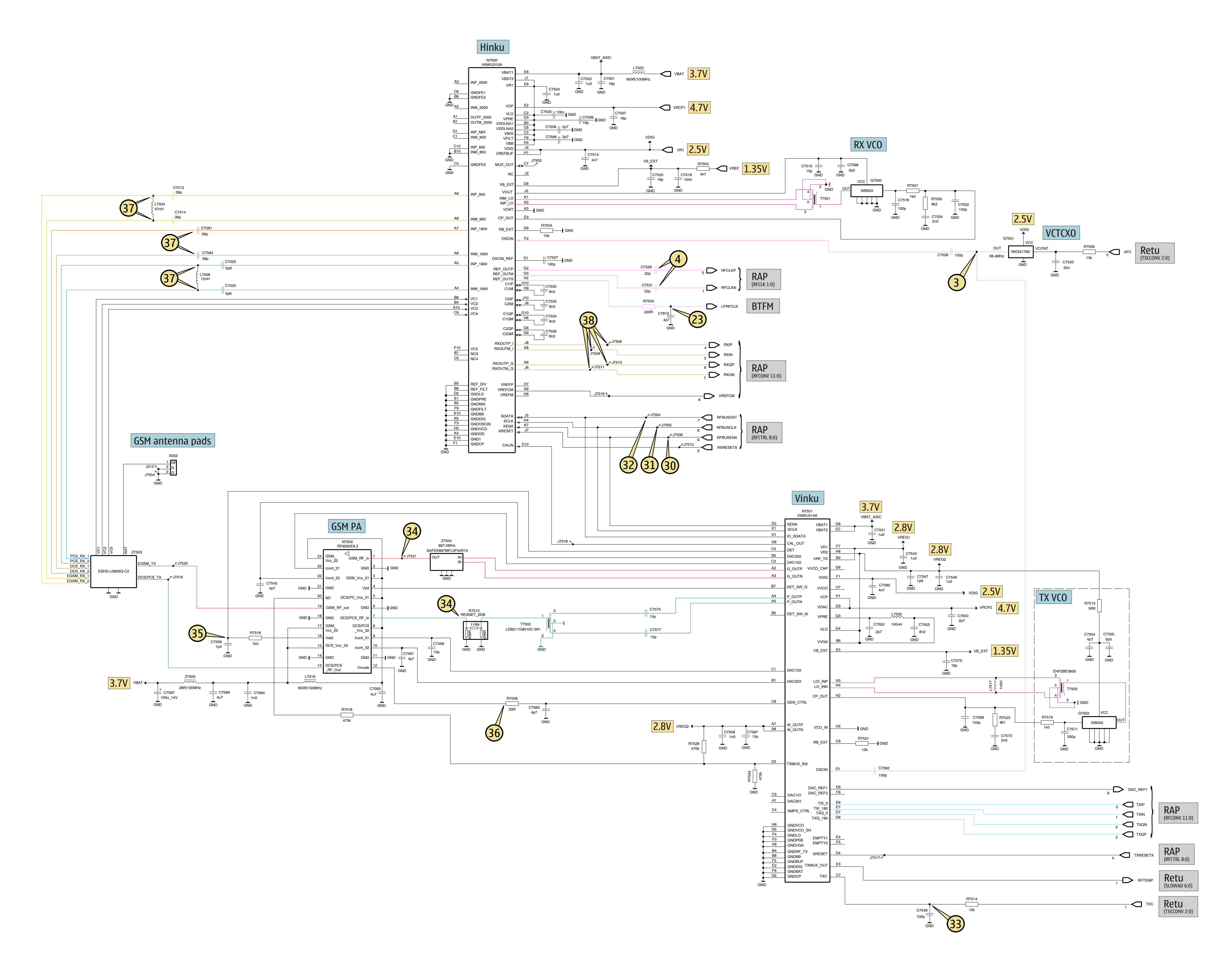
Charger plug
Tahvo
CHARGER
X2000
2.1V if ext. microphone is active
5V
VBUS
System connector
2.5V
VOUT
X2001
Retu
XAUDIO(7:0)
HOOKDET
MICB2
MIC2P
MIC2N
XEARL
XEARLC
XEARR
XEARRC
charge
charge gnd
ACI
VOUT
Vbus
D+
D-
data gnd
Xmicn
Xmicp
Xear_l_n
Xear_l_p
Xear_r_n
Xear_r_p
GND
AGND
BTFM
FM_ANT
Retu, Tahvo
USB_ACI(7:0)
SLAVEPU
DPRXD
DMTXD
MASTPD2
MASTPD1
ACI
VANA

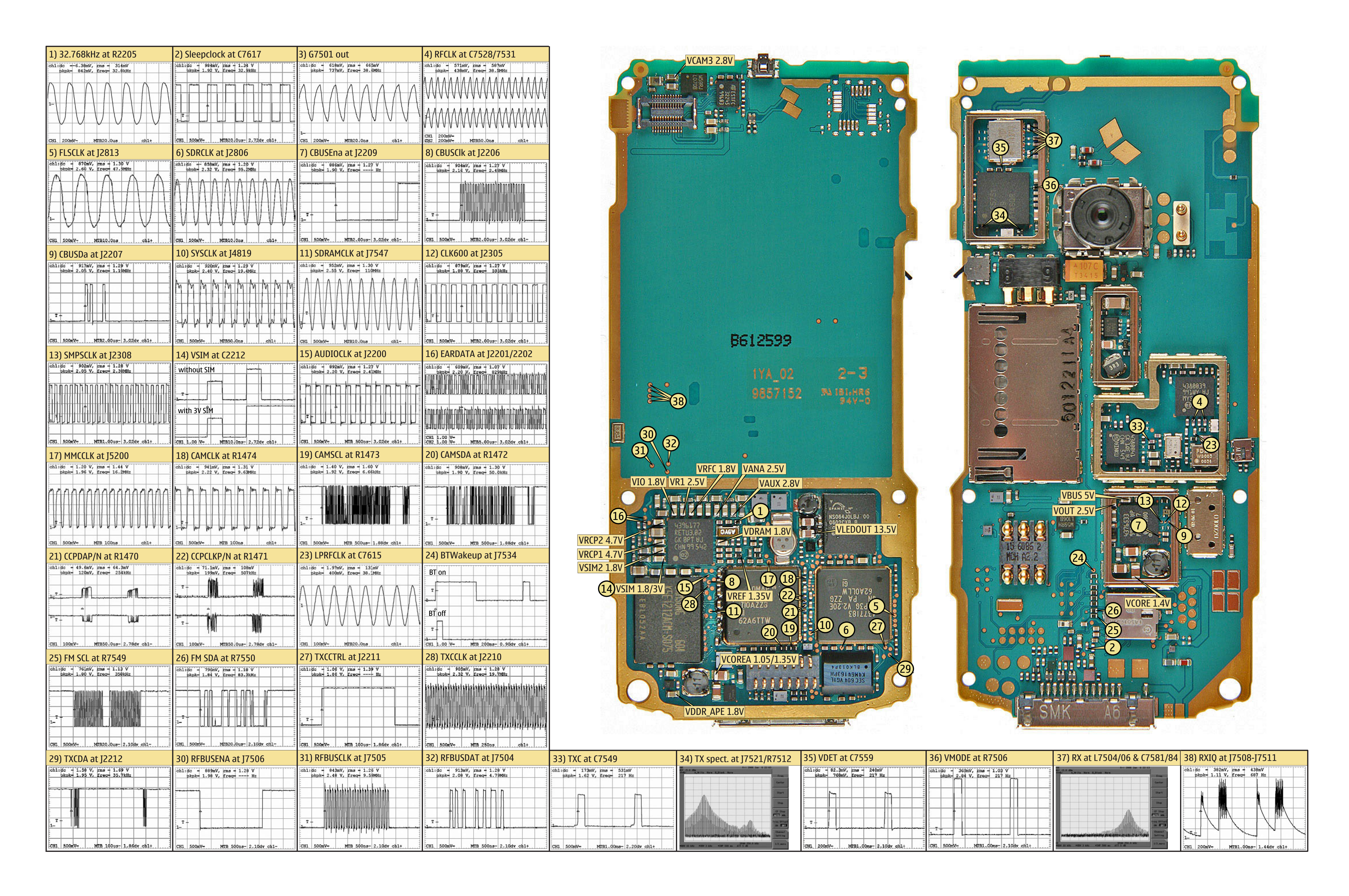


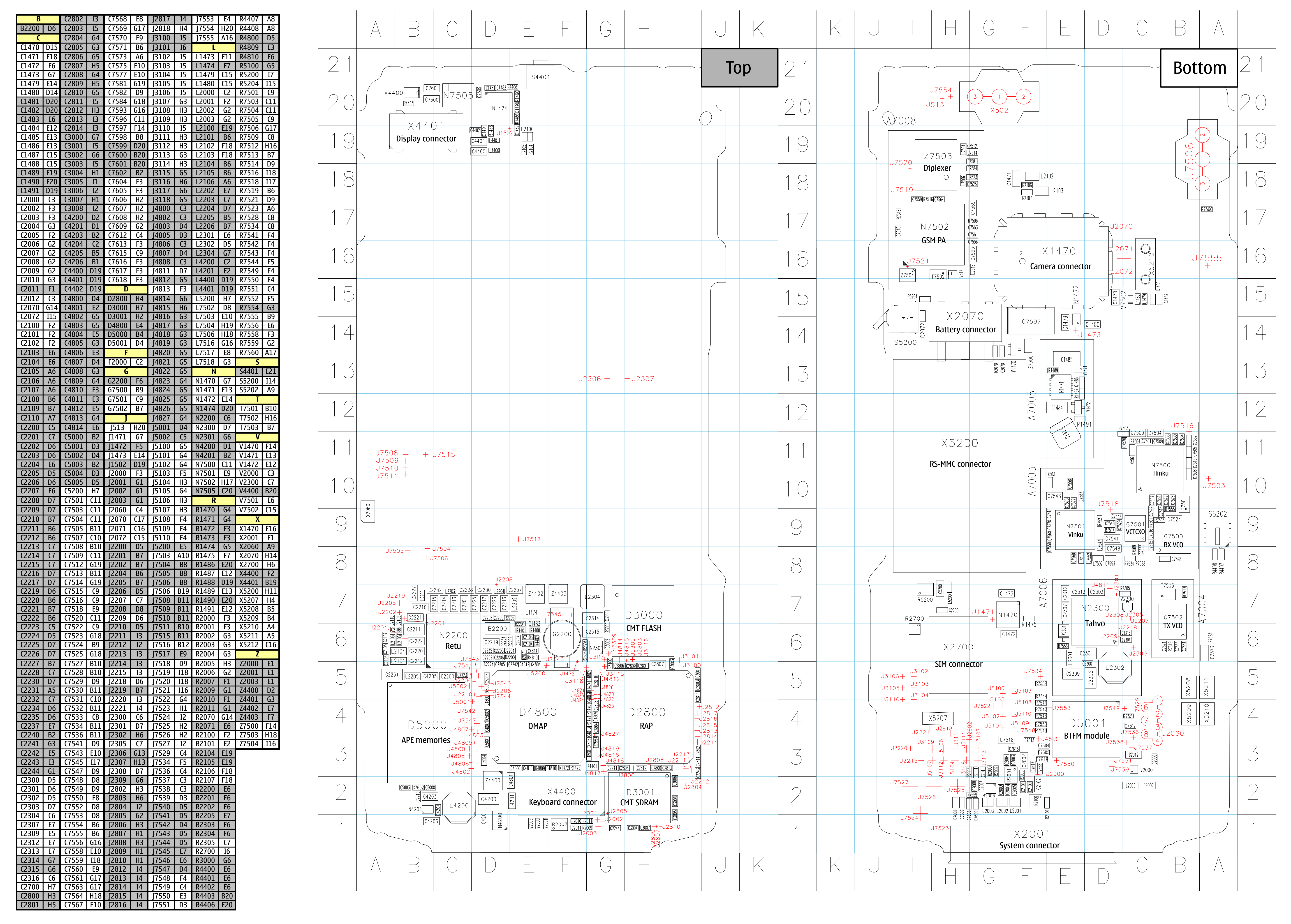
Retu
Microphone
Earpiece
BTFM
S4401
(page 5)
2.1V if mic. is active
IHF speaker
System connector
ALS
RF part
RAP
SIM connector
Vibra
Battery connector
1.8V: active
0V: sleep mode
Tahvo
Flash interface
RAP, OMAP, BTFM
System connector
LED driver
13.5V (lights on)
X4400, X4401
RAP, OMAP
2.5V (accessory connected)
5V (phone connected to host)


RAP
Retu, Tahvo, OMAP, BTFM
RF part
OMAP
BTFM
OMAP
Retu, Tahvo
Retu
BTFM
BTFM
Tahvo
Retu
CMT SDRAM
6
1.8V
1.8V
1.4V
5
CMT Flash
1.8V
1.8V
1.8V


OMAP
APE combo memory
Flashlight driver
Flashlight connector
Camera connector
Display connector
Slider switch
RS-MMC connector
Power on key
Keyboard connector
BTFM
APE Vcore SMPS
Tahvo
RAP
Retu
Retu, RAP
Retu, Tahvo, RAP
BTFM
RF part
System connector
1.8V: Cam. off
0V: Cam. on
1.8V: MMC accessable
1.8V: active
0V: sleep
3.7V (unpressed)
1.05/1.35V


Hinku
N7500
HINKU310A
RX VCO
VCTCXO
Retu
(TXCCONV 2:0)
RAP
(RFCLK 1:0)
BTFM
RAP
(RFCONV 11:0)
RAP
(RFCTRL 8:0)
GSM antenna pads
Vinku
N7501
VINKU314A
GSM PA
TX VCO
RAP
(RFCTRL 8:0)
Retu
(SLOWAD 6:0)
3.7V
4.7V
2.5V
1.35V
2.8V


1) 32.768kHz at R2205
2) Sleepclock at C7617
3) G7501 out
4) RFCLK at C7528/7531
5) FLSCLK at J2813
6) SDRCLK at J2806
7) CBUSEna at J2209
8) CBUSClk at J2206
9) CBUSDa at J2207
10) SYSCLK at J4819
11) SDRAMCLK at J7547
12) CLK600 at J2305
13) SMPSCLK at J2308
14) VSIM at C2212
without SIM
with 3V SIM
15) AUDIOCLK at J2200
16) EARDATA at J2201/2202
17) MMCCLK at J5200
18) CAMCLK at R1474
19) CAMSCL at R1473
20) CAMSDA at R1472
21) CCPDAP/N at R1470
22) CCPCLKP/N at R1471
23) LPRFCLK at C7615
24) BTWakeup at J7534
BT on
BT off
25) FM SCL at R7549
26) FM SDA at R7550
27) TXCCTRL at J2211
28) TXCCLK at J2210
29) TXCDA at J2212
30) RFBUSENA at J7506
31) RFBUSCLK at J7505
32) RFBUSDAT at J7504
33) TXC at C7549
34) TX spect. at J7521/R7512
35) VDET at C7559
36) VMODE at R7506
37) RX at L7504/06 & C7581/84
38) RXIQ at J7508-J7511
VCAM3 2.8V
VIO 1.8V
VR1 2.5V
VRFC 1.8V
VANA 2.5V
VAUX 2.8V
VDRAM 1.8V
VLEDOUT 13.5V
VRCP2 4.7V
VRCP1 4.7V
VSIM2 1.8V
VSIM 1.8/3V
VREF 1.35V
VCOREA 1.05/1.35V
VDDR_APE 1.8V
VBUS 5V
VOUT 2.5V
VCORE 1.4V
B612599
1YA_02
2-3
9857152
SMK
A6



B		C2802	I3	C7568	E8	J2817	I4	J7553	E4	R4407	A8
B2200	D6	C2803	I5	C7569	G17	J2818	H4	J7554	H20	R4408	A8
C		C2804	G4	C7570	E9	J3100	I5	J7555	A16	R4800	D5
C1470	D15	C2805	G3	C7571	B6	J3101	I6	L		R4809	E3
C1471	F18	C2806	G5	C7573	A6	J3102	I5	L1473	E11	R4810	E6
C1472	F6	C2807	H5	C7575	E10	J3103	I5	L1474	E7	R5100	G5
C1473	G7	C2808	G4	C7577	E10	J3104	I5	L1479	C15	R5200	I7
C1479	E14	C2809	H5	C7581	G19	J3105	I5	L1480	C15	R5204	I15
C1480	D14	C2810	G5	C7582	D9	J3106	I5	L2000	C2	R7501	C9
C1481	D20	C2811	I5	C7584	G18	J3107	G3	L2001	F2	R7503	C11
C1482	D20	C2812	H3	C7593	G16	J3108	H3	L2002	G2	R7504	C11
C1483	E6	C2813	I3	C7596	C11	J3109	H3	L2003	G2	R7505	C9
C1484	E12	C2814	I3	C7597	F14	J3110	I5	L2100	E19	R7506	G17
C1485	E13	C3000	G7	C7598	B8	J3111	H3	L2101	B6	R7509	C8
C1486	E13	C3001	I5	C7599	D20	J3112	H3	L2102	F18	R7512	H16
C1487	C15	C3002	G6	C7600	B20	J3113	G3	L2103	F18	R7513	B7
C1488	C15	C3003	I5	C7601	B20	J3114	H3	L2104	B6	R7514	D9
C1489	E19	C3004	H1	C7602	B2	J3115	G5	L2105	B6	R7516	I18
C1490	E20	C3005	I1	C7604	F3	J3116	H6	L2106	A6	R7518	I17
C1491	D19	C3006	I2	C7605	F3	J3117	G6	L2202	E7	R7519	B6
C2000	C3	C3007	H1	C7606	H2	J3118	G5	L2203	C7	R7521	D9
C2002	F3	C3008	I2	C7607	H2	J4800	C3	L2204	D7	R7523	A6
C2003	F3	C4200	D2	C7608	H2	J4802	C3	L2205	B5	R7528	C8
C2004	G3	C4201	D1	C7609	G2	J4803	D4	L2206	B7	R7534	C8
C2005	F2	C4203	B2	C7612	C4	J4805	D3	L2301	E6	R7541	F4
C2006	G2	C4204	C2	C7613	F3	J4806	C3	L2302	D5	R7542	F4
C2007	G2	C4205	B5	C7615	C9	J4807	D4	L2304	G7	R7543	F4
C2008	G2	C4206	B1	C7616	F3	J4808	C3	L4200	C2	R7544	F5
C2009	G2	C4400	D19	C7617	F3	J4811	D7	L4201	E2	R7549	F4
C2010	G3	C4401	D19	C7618	F3	J4812	G5	L4400	D19	R7550	F4
C2011	F1	C4402	D19	D		J4813	F3	L4401	D19	R7551	C4
C2012	C3	C4800	D4	D2800	H4	J4814	G6	L5200	H7	R7552	F5
C2070	G14	C4801	E2	D3000	H7	J4815	H6	L7502	D8	R7554	G3
C2072	I15	C4802	G5	D3001	H2	J4816	G3	L7503	E10	R7555	B9
C2100	F2	C4803	G5	D4800	E4	J4817	G3	L7504	H19	R7556	E6
C2101	F2	C4804	E5	D5000	B4	J4818	G3	L7506	H18	R7558	F3
C2102	F2	C4805	G3	D5001	D4	J4819	G3	L7516	G16	R7559	G2
C2103	E6	C4806	E3	F		J4820	G5	L7517	E8	R7560	A17
C2104	E6	C4807	D4	F2000	C2	J4821	G5	L7518	G3	S	
C2105	A6	C4808	G3	G		J4822	G5	N		S4401	E21
C2106	A6	C4809	G4	G2200	F6	J4823	G4	N1470	G7	S5200	I14
C2107	A6	C4810	F3	G7500	B9	J4824	G5	N1471	E13	S5202	A9
C2108	B6	C4811	E3	G7501	C9	J4825	G5	N1472	E14	T	
C2109	B7	C4812	E5	G7502	B7	J4826	G5	N1474	D20	T7501	B10
C2110	A7	C4813	G4	J		J4827	G4	N2200	C6	T7502	H16
C2200	C5	C4814	E6	J513	H20	J5001	D4	N2300	D7	T7503	B7
C2201	C7	C5000	B2	J1471	G7	J5002	C5	N2301	G6	V	
C2202	D6	C5001	D3	J1472	F5	J5100	G5	N4200	D1	V1470	F14
C2203	D6	C5002	D4	J1473	E14	J5101	G4	N4201	B2	V1471	E13
C2204	E6	C5003	B2	J1502	D19	J5102	G4	N7500	C11	V1472	E12
C2205	D5	C5004	D3	J2000	F3	J5103	F5	N7501	E9	V2000	C3
C2206	D6	C5005	D5	J2001	G1	J5104	H3	N7502	H17	V2300	C7
C2207	E6	C5200	H7	J2002	G1	J5105	G4	N7505	C20	V4400	B20
C2208	D7	C7501	C11	J2003	G1	J5106	H3	R		V7501	E6
C2209	D7	C7503	C11	J2060	C4	J5107	H3	R1470	G4	V7502	C15
C2210	B7	C7504	C11	J2070	C17	J5108	F4	R1471	G4	X	
C2211	B6	C7505	B11	J2071	C16	J5109	F4	R1472	F3	X1470	E16
C2212	B6	C7507	C10	J2072	C15	J5110	F4	R1473	F3	X2001	F1
C2213	C7	C7508	B10	J2200	D5	J5200	E5	R1474	G5	X2060	A9
C2214	C7	C7509	C11	J2201	B7	J7503	A10	R1475	F7	X2070	H14
C2215	C7	C7512	G19	J2202	B7	J7504	B8	R1486	E20	X2700	H6
C2216	D7	C7513	B11	J2204	B6	J7505	B8	R1487	E12	X4400	F2
C2217	D7	C7514	G19	J2205	B7	J7506	B8	R1488	D19	X4401	B19
C2219	D6	C7515	C9	J2206	D5	J7506	B19	R1489	E13	X5200	H11
C2220	B6	C7516	C9	J2207	C7	J7508	B11	R1490	E20	X5207	H4
C2221	B7	C7518	E9	J2208	D8	J7509	B11	R1491	E12	X5208	B5
C2222	B6	C7520	C11	J2209	D6	J7510	B11	R2000	F3	X5209	B4
C2223	C5	C7522	C9	J2210	D5	J7511	B10	R2001	F3	X5210	A4
C2224	D5	C7523	G18	J2211	I3	J7515	B11	R2002	G3	X5211	A5
C2225	D7	C7524	B9	J2212	I2	J7516	B12	R2003	G3	X5212	C16
C2226	D7	C7525	G18	J2213	I3	J7517	E9	R2004	G3	Z	
C2227	B7	C7527	B10	J2214	I3	J7518	D9	R2005	H3	Z2000	E1
C2228	C7	C7528	B10	J2215	I3	J7519	I18	R2006	G2	Z2001	E1
C2230	D7	C7529	D9	J2218	D6	J7520	I18	R2007	F1	Z2003	E1
C2231	A5	C7530	B11	J2219	B7	J7521	I16	R2009	G1	Z4400	D2
C2232	C7	C7531	C10	J2220	I3	J7522	G4	R2010	F1	Z4401	G3
C2234	D6	C7532	B11	J2221	I4	J7523	H1	R2011	G1	Z4402	E7
C2235	D6	C7533	C8	J2300	C6	J7524	I2	R2070	G14	Z4403	F7
C2237	E7	C7534	B11	J2301	D7	J7525	H2	R2071	E6	Z7500	F14
C2240	B2	C7536	B11	J2302	H6	J7526	H2	R2100	F2	Z7503	H18
C2241	G3	C7541	D9	J2305	C7	J7527	I2	R2101	E2	Z7504	I16
C2242	E5	C7543	E10	J2306	G13	J7529	C4	R2104	E19		
C2243	I3	C7545	I17	J2307	H13	J7534	F5	R2105	E19		
C2244	G1	C7547	D9	J2308	D7	J7536	C4	R2106	F18		
C2300	D5	C7548	D8	J2309	G6	J7537	C3	R2107	F18		
C2301	D6	C7549	D9	J2802	H3	J7538	C3	R2200	E6		
C2302	D5	C7550	E8	J2803	H6	J7539	D3	R2201	E6		
C2303	D7	C7552	D8	J2804	I2	J7540	D5	R2202	E6		
C2304	C6	C7553	D8	J2805	G2	J7541	D5	R2205	E7		
C2307	E7	C7554	B6	J2806	H3	J7542	D4	R2303	F6		
C2309	E5	C7555	B6	J2807	H1	J7543	D5	R2304	F6		
C2312	E7	C7556	G16	J2808	H3	J7544	D5	R2305	C7		
C2313	E7	C7558	E10	J2809	H1	J7545	E7	R2700	I6		
C2314	G7	C7559	I18	J2810	H1	J7546	E6	R3000	G6		
C2315	G6	C7560	E9	J2812	I4	J7547	D4	R4400	E6		
C2316	C6	C7561	G17	J2813	I4	J7548	F4	R4401	E6		
C2700	H7	C7563	G17	J2814	I4	J7549	C4	R4402	E6		
C2800	H3	C7564	H18	J2815	I4	J7550	E3	R4403	B20		
C2801	H5	C7567	E10	J2816	I4	J7551	D3	R4406	E20		